

REMARKS

Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested. Claims 1, 20, 39 and 55 have been amended to further recite the claimed invention and claims 7, 26 and 45 have been cancelled without prejudice or disclaimer. Claims 1-6, 8-25, 27-44, and 46-62 are pending.

Applicant has amended the specification to correct a typographical error.

Claims 39-51 and 53-57 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. patent no. 6,583,068 to Yan et al. ("Yan et al."). Applicant respectfully traverses the rejection, without prejudice.

Applicant respectfully submits that the cited portions of Yan et al. fail to disclose, teach or suggest a patterning structure comprising, *inter alia*, an aluminium coating with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in independent claim 39. Further, Applicant respectfully submits that the cited portions of Yan et al. fail to disclose, teach or suggest a method of forming a patterning structure for use in a lithographic apparatus, the method comprising, *inter alia*, forming a protective coating having a thickness of about 0.1 to about 5 nm on top of the aluminium absorber as recited in independent claim 55.

Yan et al. merely disclose a top coating having a thickness of about 20 nm thick. Yan et al., col. 3, lines 26-26 and Yan et al, col. 6, lines 34-35. As discussed in Applicant's specification, a significant problem is design of a EUV lithographic process with little or no phase induced aberrations. For example, a problem with prior art EUV masks is that the top coating is of a material with a refractive index not close to an ideal refractive index and having a large thickness that magnifies the deviation from an ideal refractive index. See, e.g., paragraph 10 of Applicant's specification. Accordingly, Applicant's claimed invention recites a specific combination of features, features that include an aluminium coating or absorber having a protective top coating having a thickness of about 0.1 to about 5 nm. In contrast, Yan et al. merely focuses on obtaining a high contrast EUV mask suitable for UV/DUV inspection. Yan et al., col. 1, lines 39-52. Thus, Applicant submits that the cited portions of Yan et al. at least fail to disclose, teach or suggest the claimed protective top coating having a thickness of about 0.1 to about 5 nm.

Therefore, for at least the above reasons, the cited portions of Yan et al. fail to disclose, teach or suggest all the features recited by independent claims 39 and 55. Claim 45 has been cancelled and so its rejection is now moot. Claims 40-44, 46-51 and 53-54 depend from claim 39 and claims 56-57 depend from independent claim 55 and are, therefore, patentable for at least the same reasons provided above related to respectively claims 39 and 55, and for the additional features recited therein. As a result, Applicant respectfully submits that the rejection under 35 U.S.C. §102(e) of claims 39-51 and 53-57 in view of Yan et al. should be withdrawn and the claims allowed.

Claims 1-13, 15-32, 34-38 and 58-62 stand rejected under 35 U.S.C. §103(a) as being obvious in view of Yan et al. further in view of U.S. patent application publication no. 2005/0136334 to Dierichs et al. ("Dierichs et al."). Applicant respectfully traverses the rejection, without prejudice.

Applicant respectfully submits that the comments above regarding Yan et al. with respect to independent claims 39 and 55 applies analogously to independent claims 1 and 20. In particular, the cited portions of Yan et al. fail to disclose, teach or suggest a lithographic apparatus comprising, *inter alia*, an aluminium absorber layer with a protective top coating as recited in claim 1. Similarly, the cited portions of Yan et al. fail to disclose, teach or suggest a device manufacturing method comprising, *inter alia*, minimizing formation of aberrations in the patterned beam by using a patterning structure having an aluminium absorber layer with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in claim 20. As discussed above with respect to independent claims 39 and 55, the cited portions of Yan et al. fail to disclose, teach or suggest the claimed thickness of the protective top coating on the aluminium absorber layer.

Furthermore, the cited portions of Dierichs et al. fail to overcome any of the deficiencies of Yan et al. In particular, the cited portions of Dierichs et al., as admitted by the Office Action, fail to disclose, teach or suggest a lithographic apparatus comprising, *inter alia*, an aluminium absorber layer with a protective top coating as recited in claim 1. Further, the cited portions of Dierichs et al., as admitted by the Office Action, fail to disclose, teach or suggest a device manufacturing method comprising, *inter alia*, minimizing formation of aberrations in the patterned beam by using a patterning structure having an aluminium absorber layer with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in claim 20.

Claims 7 and 26 have been cancelled and so their rejection is now moot. Claims 2-6, 8-13, 15-19 and 58-62 depend from claim 1 and claims 21-25, 27-32 and 34-38 depend from

independent claim 20 and are, therefore, patentable for at least the same reasons provided above related to respectively claims 1 and 20, and for the additional features recited therein.

Because the cited portions of Yan et al. and Dierichs et al. taken singly or in any proper combination, fail to disclose, teach or suggest the claimed subject matter of claims 1-13, 15-32, 34-38 and 58-62, Applicant respectfully requests that the rejection under 35 U.S.C. §103(a) of claims 1-13, 15-32, 34-38 and 58-62 based on Yan et al. in view of Dierichs et al. be withdrawn and the claims allowed.

Claims 14 and 33 stand rejected under 35 U.S.C. §103(a) as being obvious in view of Yan et al. and Dierichs et al. and further in view of U.S. patent application publication no. 2005/0040413 to Takahashi et al. ("Takahashi et al."). Applicant respectfully traverses the rejection, without prejudice.

Applicant respectfully submits that the comments above regarding Yan et al. with respect to independent claims 39 and 55 applies analogously to independent claims 1 and 20. In particular, the cited portions of Yan et al. fail to disclose, teach or suggest a lithographic apparatus comprising, *inter alia*, an aluminium absorber layer with a protective top coating as recited in claim 1. Similarly, the cited portions of Yan et al. fail to disclose, teach or suggest a device manufacturing method comprising, *inter alia*, minimizing formation of aberrations in the patterned beam by using a patterning structure having an aluminium absorber layer with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in claim 20. As discussed above with respect to independent claims 39 and 55, the cited portions of Yan et al. fail to disclose, teach or suggest, for example, the claimed thickness of the protective top coating on the aluminium absorber layer.

Furthermore, the cited portions of Dierichs et al. and/or of Takahashi et al. fail to overcome any of the deficiencies of Yan et al. In particular, the cited portions of Dierichs et al. and/or of Takahashi et al., as admitted by the Office Action, fail to disclose, teach or suggest a lithographic apparatus comprising, *inter alia*, an aluminium absorber layer with a protective top coating as recited in claim 1. Further, the cited portions of Dierichs et al. and/or of Takahashi et al., as admitted by the Office Action, fail to disclose, teach or suggest a device manufacturing method comprising, *inter alia*, minimizing formation of aberrations in the patterned beam by using a patterning structure having an aluminium absorber layer with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in claim 20.

Claim 14 depends from claim 1 and claim 33 depends from independent claim 20 and are, therefore, patentable for at least the same reasons provided above related to respectively claims 1 and 20, and for the additional features recited therein.

Because the cited portions of Yan et al., Dierichs et al. and Takahashi et al. taken singly or in any proper combination, fail to disclose, teach or suggest the claimed subject matter of claims 14 and 33, Applicant respectfully requests that the rejection under 35 U.S.C. §103(a) of claims 14 and 33 based on Yan et al. in view of Dierichs et al. further in view of Takahashi et al. be withdrawn and the claims allowed.

Claim 52 stands rejected under 35 U.S.C. §103(a) as being obvious in view of Yan et al. and further in view of Takahashi et al. Applicant respectfully traverses the rejection, without prejudice.

As discussed above, Applicant respectfully submits that the cited portions of Yan et al. fail to disclose, teach or suggest a patterning structure comprising, *inter alia*, an aluminium coating with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in independent claim 39.

Furthermore, the cited portions of Takahashi et al. fail to overcome any of the deficiencies of Yan et al. In particular, the cited portions of Takahashi et al., as admitted by the Office Action, fail to disclose, teach or suggest a patterning structure comprising, *inter alia*, an aluminium coating with a protective top coating having a thickness of about 0.1 to about 5 nm as recited in independent claim 39.

Claim 52 depends from independent claim 39 and is, therefore, patentable for at least the same reasons provided above related to claim 39, and for the additional features recited therein.

Because the cited portions of Yan et al. and/or Takahashi et al. taken singly or in any proper combination, fail to disclose, teach or suggest the claimed subject matter of claim 52, Applicant respectfully requests that the rejection under 35 U.S.C. §103(a) of claims 52 based on Yan et al. in view of Takahashi et al. be withdrawn and the claims allowed.

In view of the foregoing, the claims are now in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

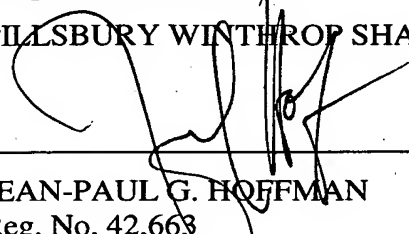
All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

DIERICHS ET AL. -- 10/816,169  
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Please charge any fees associated with the submission of this paper to Deposit Account Number 033975 under our order no. 081468/0309086. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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